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The present study attempts to estimate age-specific hospital admission rates for breast cancer in African American (AA) and white women through analyzing NHDS data from 1988 to 1994 with 1987 data used for baseline comparison. Breast cancer admissions were not proportionally equal between AA and white women across the various age groups. For the 1987 data, young AA women had proportionately higher admission rates. We analyzed age-specific hospital admission rates for breast cancer based on 1988 and 1989 NHDS data. In 1988, those rates were higher among AA than whites for all age groups except at ages 40-49. In 1989, however, the rates were higher among whites than those of AA in all age groups below age 50. For both groups combined, the mean (s.d.) age ranged from 59.1 (14.3) to 59.4 (14.8), the mean (s.d.) length of a stay ranged from 6.0 (10.2) to 6.7 (8.8), the mean (s.d.) number of diagnoses ranged from 3.0 (1.8) to 3.4 (2.1), and the mean (s.d.) number of procedure ranged from 1.3 (1.0) to 1.6 (1.1) for the years 1988 and 1989.

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Introduction

The present study attempts to estimate age-specific hospital admission rates for breast cancer in

African American (AA) and white women through analyzing NHDS data from 1988 to 1994 with

1987 data used for baseline comparison. Breast cancer admissions were not proportionally equal

between AA and white women across the various age groups. For the 1987 data, young AA

women had proportionately higher admission rates. It is necessary to see if this trend continued

from 1988 to 1994, and if so, then specific guidelines may need to be set targeting this group of

pre-menopausal AA women.

Body

We analyzed age-specific hospital admission rates for breast cancer based on 1988 and 1989

NHDS data. Tables 1-3 and Figures 1-2 show the distribution of female breast cancer cases and

rates by age-group. In 1987, the relative risk of hospital admission due to breast cancer was

higher among whites than AA for all age groups except at ages 40-49. In 1988, those rates were

higher among AA than whites for all age groups except at ages 40-49. In 1989, however, the

rates were higher among whites than those of AA in all age groups below age 50. In 1988 and

1989, there were 240,503 cases and 225,820 cases estimated in white women and 41,445 cases

and 31,130 cases estimated in AA women, respectively. For both groups combined, the mean

(s.d.) age ranged from 59.1 (14.3) to 59.4 (14.8), the mean (s.d.) length of a stay ranged from 6.0

(10.2) to 6.7 (8.8), the mean (s.d.) number of diagnoses ranged from 3.0 (1.8) to 3.4 (2.1), and

the mean (s.d.) number of procedure ranged from 1.3 (1.0) to 1.6 (1.1) for the years 1988 and

1989 (Table 4).

Table 5 shows the discharge status of breast cancer patients from 1987 to 1989 for whites

and AA. The average percentage of routine discharge was higher among whites than AA. However, the average percentage of death was lower among whites than AA. Table 6 shows the percentages of expected sources of payments by year and race. While the proportion of Medicare patients constituted about 37% among whites, it was about 28% among AA for the year 1987 and 1988 but sharply increased to 42% at 1989. AA women were four times more likely to be paid by Medicaid than whites. The married category had the highest proportion in 1987 while the unknown category had the highest proportion in 1989 among whites. For AA women, single/divorce/widow/separate category was the highest for the years 1987 to 1989 (Table 7). The Southern regions had the highest rates, while the West had the lowest rates of hospital admission due to breast cancer. These rates were the same for both whites and AA for the year 1987 to 1989 (Table 8).

From RIDIT analysis, we found that mean ridit was 0.495 in 1988 and 0.504 in 1989 among whites with year 1987 as a reference group. That means, the subjects in 1988 were slightly younger than the subjects in 1987. Among whites, the subjects age distribution was slightly older in 1989 than subjects in 1987. However, among AA, mean ridit was 0.607 in 1988 and 0.609 in 1989 with year 1987 as a reference group. That is, the subjects in 1988 and in 1989 were significantly older than the subjects in 1987.

Figure 1 revealed that in 1987 the hospital admission rate due to breast cancer among whites increased linearly until age group 60-69 where after it began to plateau. Comparing age-specific rates of 1988 and 1989 with those of 1987, all the rates were lower than those of 1987 and the gap was greatest among the age group 60-69 for both years. The rate in the age group 70-84 was decreased in 1989 when compared to that of 1988. Figure 2 revealed that among AA, there was a notably low hospital admission rate among the 50-59 and 70-84 age groups in 1987.

The rates increased sharply in these age groups in 1988. In 1989, the rates demonstrated a more gradual increase until the age group 60-69 after which the rates increased sharply. With additional analysis of the 1990 through 1994 NHDS data, long term trends may be identified.

Difficulties:

Unfortunately we have not been able to identify and hire a statistician/research associate as of yet. If we cannot hire a person soon, we may need to seek an extension of the study. Due to the vacancy of the position, analysis of the comorbid diagnoses and procedures performed between these two groups for all the study periods has been delayed.

APPENDICES
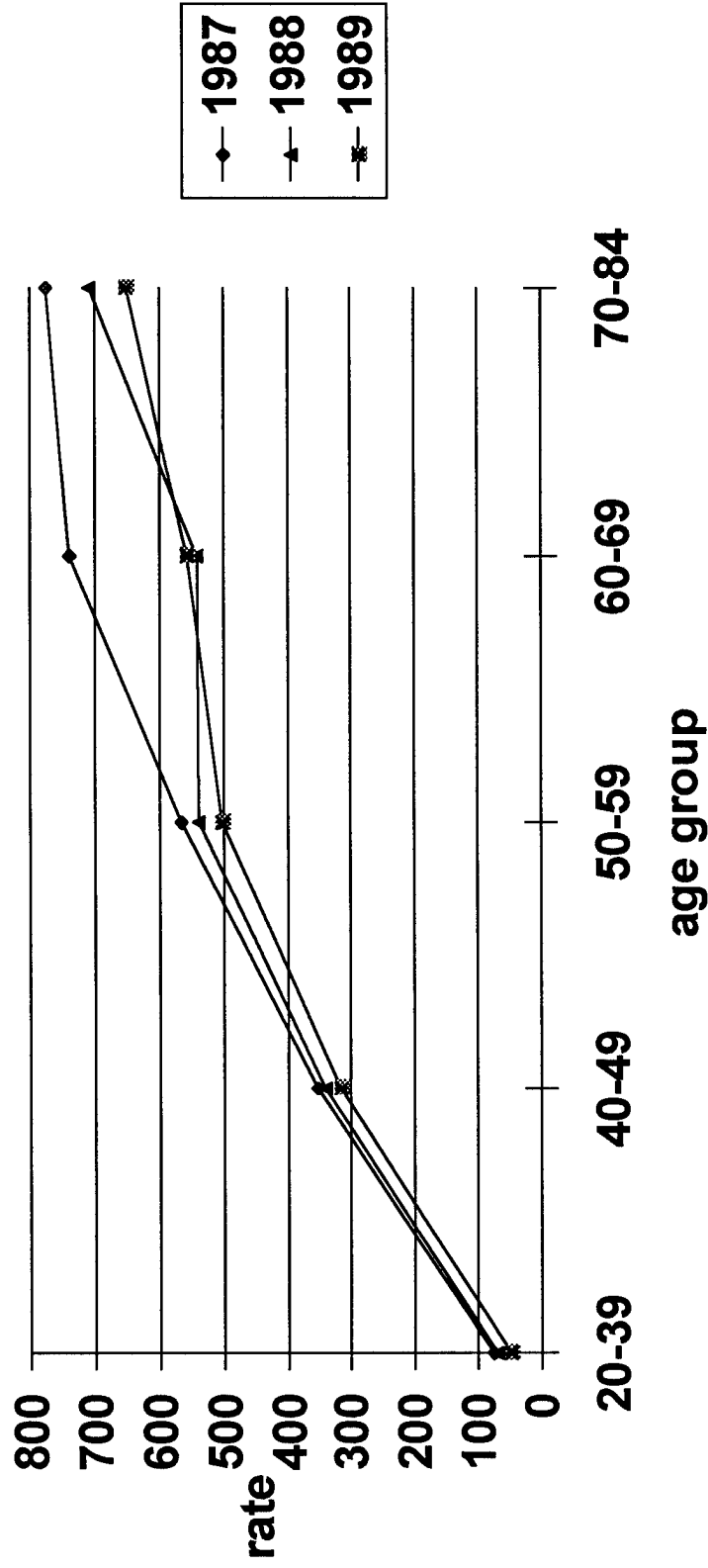
rate: per 100,000

Figure 1. Age-specific Hospital Admission rate of breast cancer by year among White Women
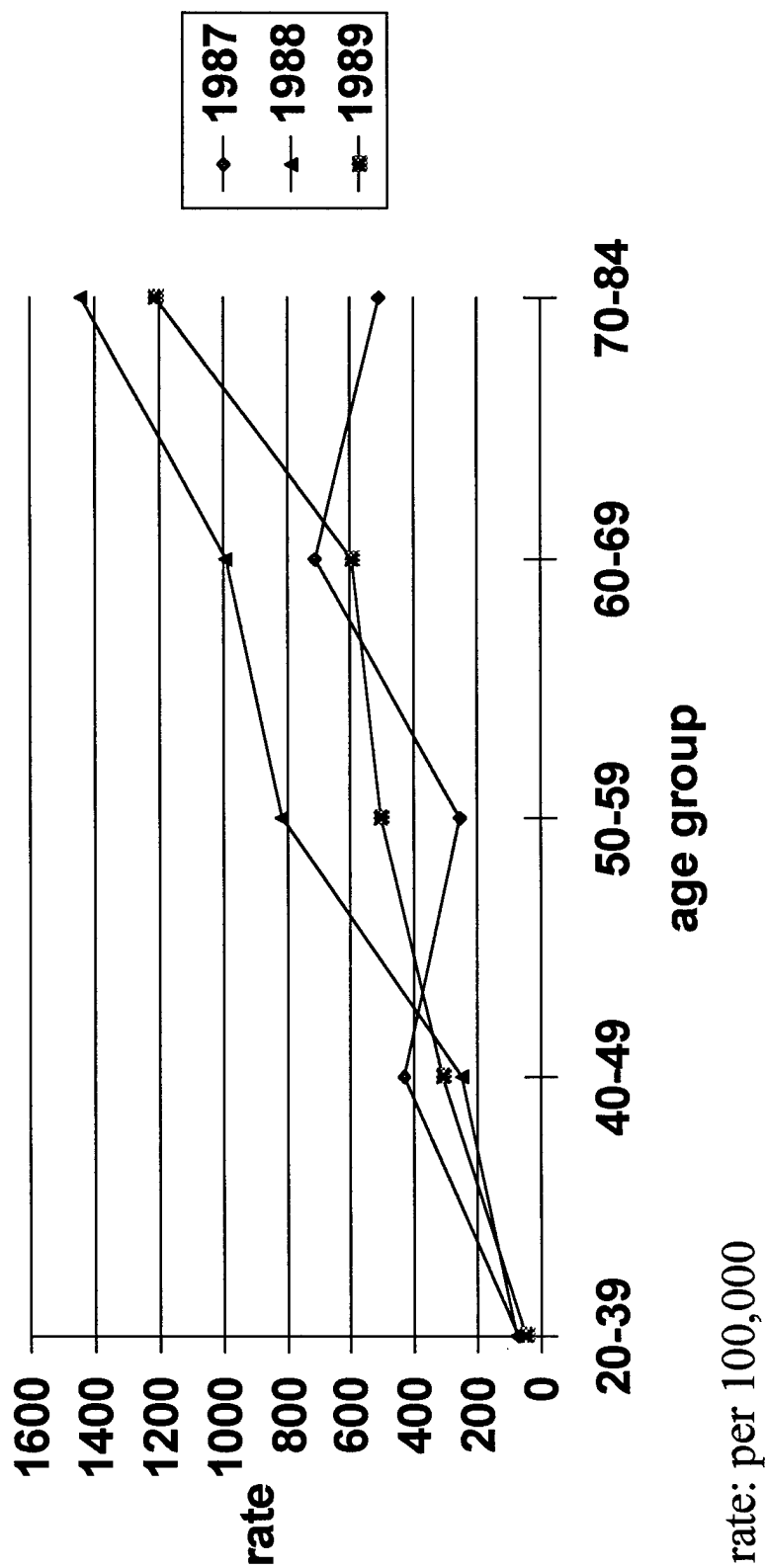
Figure 2. Age-specific Hospital Admission rate of breast cancer by year among African-American Women

Table 1. Age-specific Hospital Admission rate of Breast cancer by race: year 1987

Age	White Rate *	n	%	AA Rate *	n	%	RR**
20-39	76.89	26,233	9.9	74.63	4,025	15.9	0.97
40-49	351.61	42,753	16.1	433.67	6,813	26.9	1.23
50-59	566.1	55,688	20.9	257.6	3,220	12.7	0.46
60-69	740.5	72,478	27.2	712.4	7,295	28.8	0.96
70-84	774.5	69,037	25.9	509.4	3,963	15.7	0.66
		266,189			25,316		

* rate per 100,000
** Relative Risk: AA rate/ White rate

Table 2. Age-specific Hospital Admission rate of Breast cancer by race: year 1988

| Age | White | | | AA | | | |
	Rate *	n	%	Rate *	n	%	RR**
20-39	69.3	23,562	9.8	79.5	4,333	10.5	1.15
40-49	340.3	43,270	18.0	252.3	4,135	10.0	0.74
50-59	538.1	52,923	22.0	815.6	10,350	25.0	1.52
60-69	540.1	53,796	22.4	992.4	10,569	25.5	1.84
70-84	710.2	66,952	27.7	1440.6	12,058	29.1	2.03
		240,503			41,445		

* rate per 100,000
** Relative Risk: AA rate/ White rate

Table 3. Age-specific Hospital Admission rate of Breast cancer by race: year 1989

| Age | White | | | AA | | | |
	Rate *	n	%	Rate *	n	%	RR**
20-39	49.9	16,927	7.5	46.3	2,541	8.2	0.93
40-49	317.0	41,942	18.6	312.1	5,347	17.2	0.99
50-59	500.7	49,207	21.8	502.9	6,472	20.8	1.00
60-69	555.5	55,382	24.5	599.0	6,481	20.8	1.08
70-84	651.2	62,362	27.6	1210.5	10,289	33.0	1.86
		225,820			31,130		

 * rate per 100,000
** Relative Risk: AA rate/ White rate

Table 4.Mean and standard deviation of age, length of stay, number of diagnosis, and procedures by year and race

White

	1987		1988		1989	
	$\bar{x}$	s.d.	$\bar{x}$	s.d.	$\bar{x}$	s.d.
Age	58.92	13.87	59.06	14.3	59.44	13.8
Length of stay	6.07	7.26	6.13	7.6	5.97	10.2
Number of diagnosis	3.01	1.92	3.04	1.8	3.20	1.87
Number of procedures	1.57	1.09	1.58	1.1	1.61	1.12

African American

	1987		1988		1989	
	$\bar{x}$	s.d.	$\bar{x}$	s.d.	$\bar{x}$	s.d.
Age	53.55	14.69	59.44	12.8	59.44	14.8
Length of stay	7.59	10.3	6.27	8.0	6.72	8.8
Number of diagnosis	3.09	1.95	3.01	1.77	3.38	2.06
Number of procedures	1.71	1.01	1.49	1.0	1.27	0.97

Table 5.   Discharge Status of breast cancer patients by year

White

| | 1987 | | 1988 | | 1989 | |
	n	%	n	%	n	%
Routine discharge	234,777	88.1	212,709	88.4	199,064	88.2
Transfer to short-term hospital	1,519	0.6	1,198	0.5	1,979	0.9
Transfer to long-term care	9,244	3.5	7,293	3.0	8,520	3.8
Dead	10,520	4.0	11,607	4.8	7,395	3.3
Not stated	10,110	3.8	7,696	3.2	7,699	3.4

African American

| | 1987 | | 1988 | | 1989 | |
	n	%	n	%	n	%
Routine discharge	21,147	83.5	37,014	89.3	26,949	86.6
Transfer to short-term hospital	205	0.8	0	0.0	45	0.1
Transfer to long-term care	609	2.4	453	1.1	1,447	4.7
Dead	2,656	10.5	1,781	4.3	1,926	6.2
Not stated	575	2.3	1,875	4.5	763	2.5

Table 6. Expected Source of payments of breast cancer patients by year

White

	1987		1988		1989	
	n	%	n	%	n	%
Medicare	103,099	38.7	88,836	36.9	85,324	37.8
Medicaid	8,104	3.0	6,038	2.5	7,519	3.3
Blue Cross/ other private ins.	140,364	52.7	129,869	54.0	108,148	47.9

African American

	1987		1988		1989	
	n	%	n	%	n	%
Medicare	7,075	28.0	11,769	28.4	13,157	42.3
Medicaid	2,971	11.7	6,588	15.9	3,851	12.4
Blue Cross/ other private ins.	12,339	48.7	18,526	44.7	11,645	37.4

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Table 7.   Marital Status of breast cancer patients by year

White

	1987		1988		1989	
	n	%	n	%	n	%
Married	125,137	47	87,269	36.3	67,639	30.0
Single/Widow/ Divorce/Separate	77,845	29.2	45,736	19.0	51,535	22.8
Unknown	63,207	23.7	107,498	44.7	106,646	47.2

African American

	1987		1988		1989	
	n	%	n	%	n	%
Married	6,658	26.3	13,915	33.6	7,503	24.1
Single/Widow/ Divorce/Separate	11,972	47.3	15,293	36.9	15,333	49.3
Unknown	6,686	26.4	12,237	29.5	8,294	26.6

Table 8 .   Regional distribution of breast cancer patients by year

White

	1987		1988		1989	
	n	%	n	%	n	%
North East	58,315	21.9	72,306	30.1	64,731	28.7
Mid West	76,671	28.8	51,085	21.2	64,295	28.5
South	82,310	30.9	83,941	34.9	76,604	33.9
West	48,893	18.4	33,171	13.8	20,190	8.9

African American

	1987		1988		1989	
	n	%	n	%	n	%
North East	6,429	25.4	13,912	33.6	10,064	32.3
Mid West	4,737	18.7	7,370	17.8	5,658	18.2
South	12,912	51.0	18,858	45.5	13,910	44.7
West	1,238	4.9	1,305	3.1	1,498	4.8